



PROVISIONAL SPECIFICATION

Improvements in or relating to Instructional Apparatus for the Game of Golf

I, ALFRED BERRY, a British Subject, of The Turret, 7, Portsmouth Road, Kingston, Surrey, do hereby declare the nature of this invention to be as follows:—

5 This invention relates to means for instructing or for correcting a player when swinging a golf club and it has for its primary object to eliminate a very common fault, that is to say, movement
10 of the head at any time during the swing, whereby a player is enabled to cultivate a correct and consistent swing without the assistance of an instructor; a further object of the invention being to afford an
15 indication to the player of the nature of any head movement if made.

According to the invention, a golf swing corrector comprises a plurality of axially aligned and spaced datum sights
20 located adjacent the normal position a ball would occupy in respect to a player and which when viewed in the player's line of sight for addressing a ball are seen superimposed in symmetrical
25 relationship and, in the event of movement of the player's head occurring during a stroke, afford a visual indication of the direction and extent of such movement by the consequential asymmetry
30 produced thereby.

In the simplest form of the invention the aforesaid datum sights may comprise a pair of spaced discs or plates superposed co-axially upon a pin or peg adapted to
35 be pressed into the ground adjacent the point normally occupied by a golf ball with respect to a player and at such an angle as to lie in axial alignment with the player's line of sight when addressing
40 a ball; said two discs or plates being preferably of different colours.

In another form of the invention; the datum sights may be produced by a spot of light, seen through a plurality of
45 spaced aperture sights which are superposed either over a reflecting surface illuminated by natural or artificial means, or over translucent material, such as ground glass, behind which a light is
50 situated.

Where a reflecting surface is used, the reflecting surface and the aperture sights may be placed differently in relation to

the eyes of the player, for example, two
aperture sights may be between the
player's eyes and the reflecting surface,
or the reflecting surface may be located
between two aperture sights, or the
reflecting surface may be between the
player's eyes and the two aperture sights.

By employing apertures or aperture sights of different configuration, such as a square and a circle suitably proportioned, the alteration in the shape and appearance of the spot of light at the
65 commencement of any movement of the player's head will indicate the nature of the movement, upwardly or downwardly, to the right or left, or intermediately.

As the movement of a player's head sideways is at right angles to the line between the player's eyes and the ball position, while up and down movement is on a line approximately 60 degrees to a
75 line at right angles to the line of sight, it is preferable to magnify the up and down movement of the head in order that the apparatus shall be equally sensitive for vertical and horizontal movement.

One method of securing such magnification is to proportion the vertical and horizontal dimensions of the aperture sights and also their spacing, in such manner that one sight functions for vertical
80 movement and the other for horizontal movement, and any suitable means for carrying this into effect may be employed.

In a further form of the invention, cross-wires, preferably spaced apart, and illuminated either naturally or arti-
90 ficially, may be employed in place of one of the aforesaid aperture sights, and the device may be fitted with a lens if desired.

For example, a vertical wire may be mounted so as to intersect the aperture
95 or aperture sight adjacent to the spot of light, and a horizontal wire may be mounted diametrically of the aperture or aperture sight remote from the spot of light, the point of intersection of said
100 wires serving to facilitate the correct positioning of the player's head in relation to the device before commencing to swing the club, the cross-wires also serving to indicate, during any head movement, 105 equal movement across the spot of light

for corresponding sideways and vertical head movement.

These wires when employed may either be mounted in planes normal to the line of sight or they may be mounted in planes inclined thereto. If, say, a wire is mounted coincidently with the vertical diameters of the aperture sights but inclined between the lowest point on the circumference of that aperture sight adjacent the player's eyes and the highest point on the circumference of that aperture sight remote from the player's eyes, a lateral movement of the player's head will be indicated by a different apparent lateral movement of the two ends of the wire and if a small arrow head pointer is mounted on the wire at the upper end thereof a movement of the eye to the left or right will be indicated by an apparent movement of the pointer in the same direction. By inclining the horizontal wire in a similar manner between the aperture sights an apparent movement of the wire upwardly or downwardly indicates corresponding movement of the player's head. Instead of wires, photographic or other representations of pointers such as clock hands on glass or other transparent material may be employed.

In a still further form of the invention, the device may include two lantern slides or other sheets of transparent material whereon are printed or otherwise marked rings, dots, or other figures or symbols, designed to be aligned in the player's line of sight.

As one example of carrying the invention into practical effect, the device may comprise an enclosed casing on or near the bottom of which is disposed a reflector to which a beam of light is admitted at an angle of 60 degrees thereto through an aperture located suitably in the rear upper part of the casing, and in front of the casing there may be an aperture fitted with a lens disposed coaxially with the reflected beam of light.

Between the lens and its focus there may be located cross-wires whereof the horizontal wire is set further from the lens and is of smaller gauge than the vertical wire in order to compensate for the increased magnification of the more distant wire and thus present to the eye cross-wires of apparently the same gauge. This spaced arrangement of the cross-wires renders the device equally sensitive for vertical and horizontal movement of the player's head.

The aforesaid casing may be employed either on the surface of the ground or above or below that level, and the beam of light may be provided either by natural or artificial means.

In order to increase the sensitivity of the device, as may be desirable commensurately with the progress or increased skill of a player, means such as apertures of variable size movable along the axis of the lens may be incorporated in the casing.

Instead of an ordinary spherical lens, a lens system may be employed to magnify vertical head movement twice as much as horizontal head movement, and the cross-wires may be so disposed on one mounting that their distance from the lens system may be varied. The sensitivity of the device is thereby variable and the device can not only be adjusted according to a particular player's progress, but also to suit the different degrees of skill possessed by successive players making use of the device.

Suitable means may be provided for adjusting the device to the playing height of each player's head.

Where cross wires are used, some form of scale may be introduced to give a reading of the extent of the head movement in any direction.

Dated the 19th day of March, 1934.

WM. BROOKES & SON,
No. 1, Quality Court, Chancery Lane,
London, W.C.2,
Chartered Patent Agents.

COMPLETE SPECIFICATION

Improvements in or relating to Instructional Apparatus for the Game of Golf

I, ALFRED BERRY, a British Subject, of The Turret, 7, Portsmouth Road, Kingston, Surrey, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to means for instructing or for correcting a player when swinging a golf club and it has

for its primary object to eliminate a very common fault, that is to say, movement of the head at any time during the swing, whereby a player is enabled to cultivate a correct and consistent swing without the assistance of an instructor; a further object of the invention being to afford an indication to the player of the nature of any head movement if made.

According to the invention a golf

swing corrector comprises a plurality of optically aligned and spaced aperture sights located adjacent the normal position a ball would occupy in respect to a player and which when viewed by the player in relation to a spot of light are seen superimposed in symmetrical relationship and, in the event of movement of the player's head occurring during a stroke, afford a visual indication of the direction and extent of such movement by the consequential asymmetry produced thereby.

The spot of light may consist of a reflecting surface illuminated by natural or artificial means, or of translucent material, such as ground glass, behind which a light is situated.

Where a reflecting surface is used, the reflecting surface and the aperture sights may be placed differently in relation to the eyes of the player, for example, two aperture sights may be between the player's eyes and the reflecting surface, or the reflecting surface may be located between two aperture sights, or the reflecting surface may be between the player's eyes and the two aperture sights.

By employing apertures or aperture sights of different configuration, such as a square and a circle suitably proportioned, the alteration in the shape and appearance of the spot of light at the commencement of any movement of the player's head will indicate the nature of the movement, upwardly or downwardly, to the right or left, or intermediately.

As the movement of a player's head sideways is at right angles to the line between the player's eyes and the ball position, while up and down movement is on a line approximately 60 degrees to a line at right angles to the line of sight, the indicated movement in a vertical direction of an aperture sight can be expressed as cosine 60 degrees, which is $\frac{1}{2}$. This movement indication therefore needs to be magnified twice in order that the apparatus shall be equally sensitive for vertical and horizontal movement.

One method of securing such magnification is to use separate aperture sights for the indication of vertical and horizontal movement and to space them apart so that the observed movement of the indicator showing vertical movement of the head shall be twice as much as the observed movement of the indicator showing horizontal movement of the head. Any suitable means for carrying this into effect may be employed.

In a further form of the invention, cross-wires, preferably spaced apart, and illuminated either naturally or artificially, may be employed in place of one

of the aforesaid aperture sights.

For example, a vertical wire may be mounted so as to intersect the aperture or aperture sight adjacent to the spot of light, and a horizontal wire may be mounted diametrically of the aperture or aperture sight remote from the spot of light, the point of intersection of said wires serving to facilitate the correct positioning of the player's head in relation to the device before commencing to swing the club, the cross-wires also serving to indicate, during any head movement, equal movement across the spot of light for corresponding sideways and vertical head movement.

These wires when employed may either be mounted in planes normal to the line of sight or they may be mounted in planes inclined thereto. If, say, a wire is mounted coincidently with the vertical diameters of the aperture sights but inclined between the lowest point on the circumference of that aperture sight adjacent the player's eyes and the highest point on the circumference of that aperture sight remote from the player's eyes, a lateral movement of the player's head will be indicated by a different apparent lateral movement of the two ends of the wire and if a small arrow head pointer is mounted on the wire at the upper end thereof a movement of the eye to the left or right will be indicated by an apparent movement of the pointer in the same direction. By inclining the horizontal wire in a similar manner between the aperture sights an apparent movement of the wire upwardly or downwardly indicates corresponding movement of the player's head. Instead of wires, photographic or other representations of pointers such as clock hands on glass or other transparent material may be employed.

In a still further form of the invention, the device may include two lantern slides or other sheets of transparent material whereon are printed or otherwise marked rings, dots, or other figures or symbols, designed to be aligned in the player's line of sight.

In order to make the device of convenient proportions, and still sensitive to small movements of the head a magnifying lens may be used to magnify the relative movements of the indicating means.

It is to be noted that, when a lens is used, and when extra magnification for up and down movement of the head is to be provided, the cross wire or the like, indicating vertical movement of the head must be more remote from the lens than the cross wire, or the like, which indicates horizontal movement of the head.

In a constructional form of the invention the device may comprise an enclosed casing on or near the bottom of which is disposed a reflector to which a beam of light is admitted at an angle of 60 degrees thereto through an aperture located suitably in the rear upper part of the casing, and in front of the casing there may be an aperture fitted with a lens disposed coaxially with the reflected beam of light.

Between the lens and its focus there may be located cross-wires whereof the horizontal wire is set further from the lens and is of smaller gauge than the vertical wire in order to compensate for the increased magnification of the more distant wire and thus present to the eye cross-wires of apparently the same gauge. This spaced arrangement of the cross-wires renders the device equally sensitive for vertical and horizontal movement of the player's head.

The aforesaid casing may be employed either on the surface of the ground or above or below that level, and the beam of light may be provided either by natural or artificial means.

In order to increase the sensitivity of the device, as may be desirable commensurately with the progress or increased skill of a player, means such as apertures of variable size movable along the axis of the lens may be incorporated in the casing.

Instead of an ordinary spherical lens, a lens system such as a combination with a spherical lens of a cylindrical lens, the axis of which is set horizontal, may be employed to magnify vertical head movement twice as much as horizontal head movement, and the cross-wires used may be mounted in the same plane and so disposed on one mounting that their distance from the lens system may be varied. The sensitivity of the device is thereby made variable and the device can be adjusted according to a particular player's progress and also to suit the different degrees of skill possessed by successive players making use of it.

Suitable means may be provided for adjusting the device to the playing height of each player's head.

Where cross wires are used, some form of scale may be introduced to give a reading of the extent of the head movement in any direction.

One constructional embodiment of the invention is illustrated by way of example in Figures 1 to 5 inclusive of the accompanying drawings, while a modified construction is illustrated in Figure 6.

Figure 1 is a perspective plan view of a device of this invention, as seen from the position in which a player stands in

relation to the device when practising a golf swing.

Figure 2 is a perspective plan view of the device as seen from the rear thereof.

Figure 3 is a longitudinal section on line A—A in Figure 1.

Figure 4 is a plan view of the device inverted and its base-plate removed.

Figure 5 is a plan view of the upper surface of the base-plate, and

Figure 6 is a sectional elevation of a modified construction of device.

Referring first to Figures 1 to 5 inclusive, the device includes a box or casing 1, of metal or other suitable material, whereof the bottom is constituted by a base-plate 2 upon the interior surface of which a small rectangular mirror 3 is mounted or secured so that when the device is in use the mirror 3 is disposed horizontally, or substantially so; and in the top of said box or casing 1, and towards the rear thereof, there is formed a rectangular aperture 4 through which a beam of light is admitted to the mirror 3.

At its forward upper part the casing 1 is formed with a circular aperture 7 in which a spherical lens 8 is held by a spring ring 9, the aperture 7 being disposed co-axially with a beam of light from the aperture 4 as reflected by the mirror 3, when the aperture 4 is viewed through the lens in a vertical plane and along a line at approximately 60 degrees to the horizontal. The lens used is of such focal length that the aperture 4 lies within the focus. The observed movement of the edges of the aperture will thus be in the same direction as the movement of the head. Around the upper side of the aperture 7 the casing 1 is formed integrally with an upstanding shield or hood 10 in order to avoid interference due to external light. The aperture 4 is covered by a ground glass disc 5 held in place by a spring ring 6.

Within the casing 1, and symmetrically with respect to the aperture 4, there are fixed cross-wires 11 and 12 respectively, whereof the wire 11, which is horizontal, is set further from the lens 8 and is of smaller gauge than the wire 12, which is vertical, this, as explained above, being in order to compensate for the increased magnification of the more distant wire 11 and thus present to the eye, when the wires are viewed through the aperture 7, cross-wires of apparently the same gauge.

The base-plate 2 is secured by screws to the bottom of the casing 1 and projecting below the base-plate 2 at the forward end of the casing 1 is a milled and conical foot 13 having a screw threaded stem taking into a threaded lug, integral with the front wall of the casing, whereby said

foot 13 may be adjusted with respect to the casing 1; while at the rear side of the base-plate 2 there are screwed or otherwise suitably fixed two conical pegs or feet 14, 14, the device being adapted to rest on the ground with said feet on the surface thereof or such of them pressed thereinto according to the required inclination of the device as may be dictated by the height of the person using it.

Instead of being constructed, as described above, as an enclosed box or casing, the device may take the form as illustrated by Figure 6.

According to this embodiment of the invention the base-plate 2 supporting the mirror 3 is formed at its rear end with one or more brackets 15 to which is articulated a tubular member 16 the inclination of which to the base-plate 2 may be varied, a clamping nut 17 being provided in order to hold the tube 16 in any position of angular adjustment.

The upper end of the tube 16 is closed and is formed with a rectangular aperture 18 covered by a ground glass disc 19 held in place by a spring ring 20, and in the lower end of the tube 16 there is mounted a lens 21 whereof the focus is beyond the aperture 18.

The cross-wires 11 and 12 are mounted within the tubular member 16 in the same manner as within the casing 1.

In this construction the lower end of the tube 16 can be extended laterally, as by a flange, (not shown), to prevent interference by external light.

In use, the device is placed on the ground in front of a player in approximately the same position as a golf ball would occupy, and the player moves away from the device until the cross-wires 11 and 12 are visible through the lens 8.

When the wires 11 and 12 appear symmetrical the player is in the correct position to practice swinging the club, at the same time keeping the wires 11 and 12 under observation. If during a swing the wires 11 and 12 remain symmetrical with respect to the aperture 7, the player is not moving the head; but if the wire 11 appears to move upwardly or downwardly, or the wire 12 appears to move to the right or to the left, the player is either raising or lowering the head or moving it to the right or left.

Thus, by observing any apparent movement of either or both of the wires 11 and 12, a player can make such corrections in practice as will enable a consistently correct swing to be attained.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is

to be performed, I declare that what I claim is:—

1. A golf swing corrector comprising a plurality of optically aligned and spaced aperture sights to be located adjacent the normal position a golf ball would occupy in respect to a player and which, when viewed by the player in relation to a spot of light, are seen superimposed in symmetrical relationship and, in the event of movement of the player's head occurring during a stroke, afford a visual indication of the direction and extent of such movement by the consequential asymmetry produced thereby.

2. A golf swing corrector as claimed in claim 1, in which the plurality of spaced aperture sights are superposed over a reflecting surface illuminated either by natural or artificial means.

3. A golf swing corrector as claimed in claim 1, wherein the spaced aperture sights are superposed over translucent material, such as ground glass, illuminated either by natural or artificial means.

4. A golf swing corrector as claimed in claim 2, wherein two aperture sights are located between the player's eyes and the reflecting surface.

5. A golf swing corrector as claimed in claim 2, wherein the reflecting surface is located between two aperture sights.

6. A golf swing corrector as claimed in claim 2, wherein the reflecting surface is located between the player's eyes and two aperture sights.

7. A golf swing corrector as claimed in any of the preceding claims, wherein the aperture sights are of different configuration.

8. A golf swing corrector as claimed in claims 1 to 7, wherein a lens is used to magnify the visual indication.

9. A golf swing corrector as claimed in any of the preceding claims, wherein means are provided to magnify the extent of any vertical movement of the player's head, in relation to the indication to horizontal head movement, in order to render the corrector equally sensitive for vertical and horizontal head movement.

10. A golf swing corrector as claimed in claim 9, wherein the vertical and horizontal dimensions of two aperture sights and also their spacing is proportioned in such manner that one sight functions for vertical movement and the other for horizontal movement of a player's head.

11. A golf swing corrector as claimed in claim 1, in which one of the aperture sights is constituted by suitably illuminated cross-wires, preferably spaced apart, and associated or not with a lens.

12. A golf swing corrector comprising

an enclosed casing containing at or near the bottom thereof a reflector, an aperture located in the upper and rearward part of said casing in such position as to admit a beam of light to said reflector, a second aperture in said casing provided with a lens, said second aperture being disposed co-axially with a beam of light reflected by said reflector when viewed through the lens in a vertical plane and along a line at approximately 60 degrees to the horizontal, and, between said lens and its focus, a pair of cross-wires supported within said casing, for the purpose set forth.

13. A golf swing corrector as claimed in claim 11, wherein of the pair of cross-wires the horizontal wire is set further from the lens and is of smaller gauge than

the vertical wire, for the purposes specified.

14. A modification of the golf swing corrector as claimed in either claim 11 or claim 12, wherein a tubular casing supporting the cross-wires between an aperture sight and a lens is mounted adjustably in relation to a base-plate located externally thereof and furnished with a reflecting surface.

15. A golf swing corrector adapted to function substantially in the manner hereinbefore set forth.

Dated the 12th day of February, 1935.

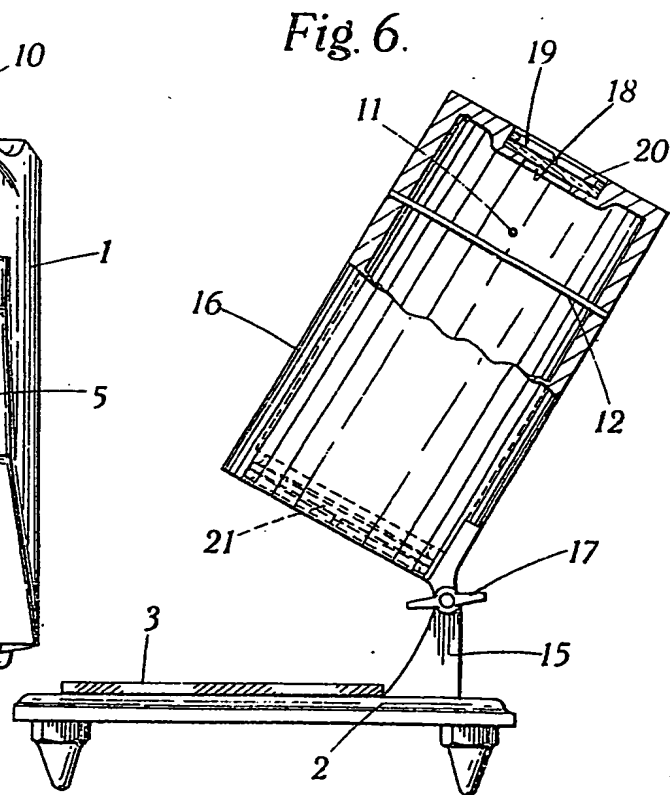
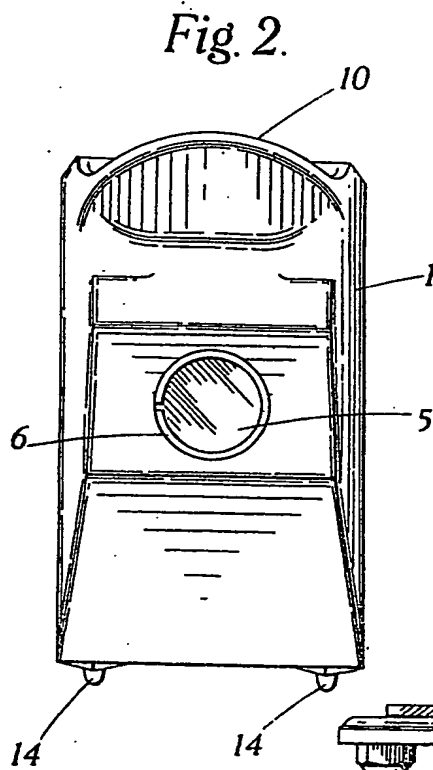
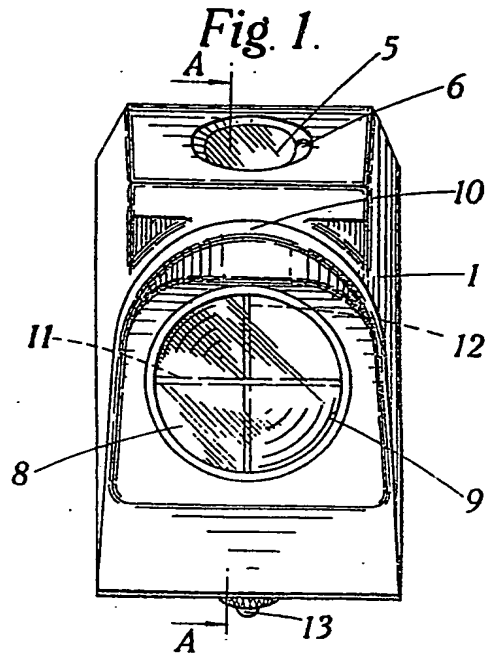
WM. BROOKES & SON,

No. 1, Quality Court, Chancery Lane,
London, W.C.2,
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Fig. 3.

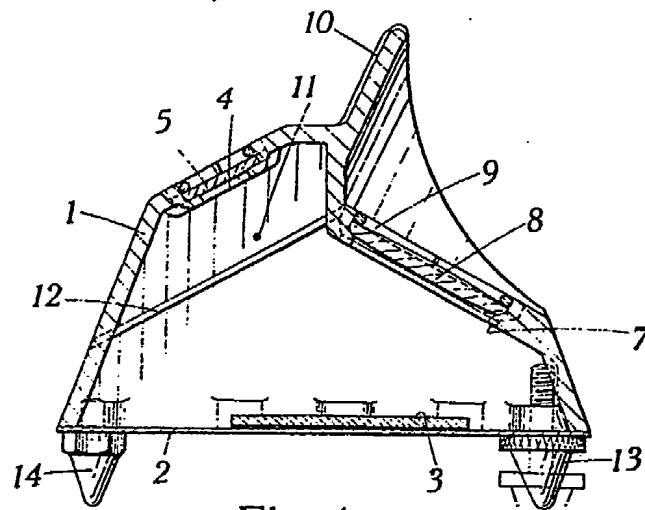


Fig. 4.

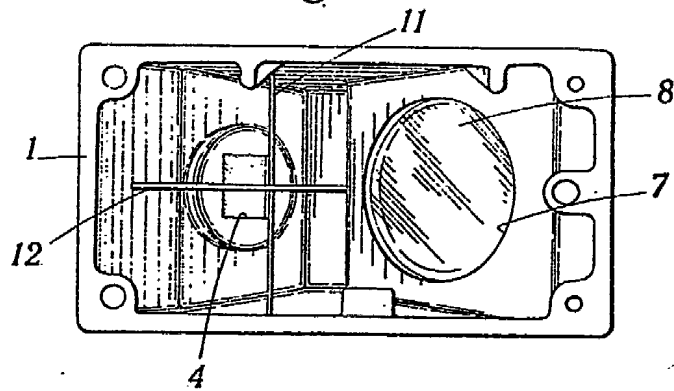
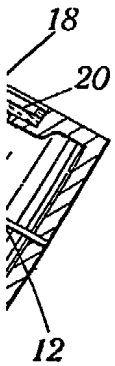
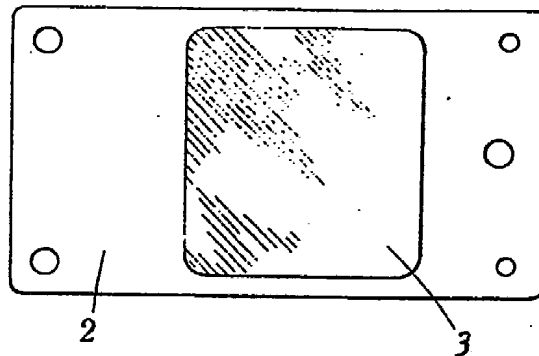


Fig. 5.



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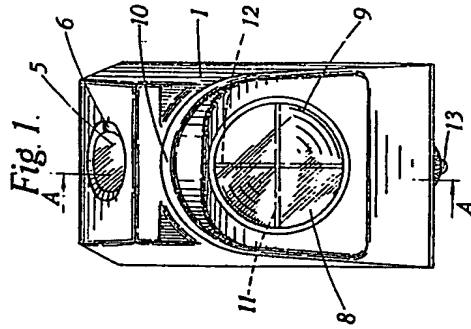


Fig. 1.

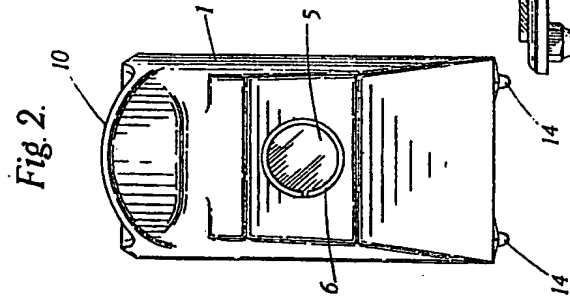


Fig. 2.

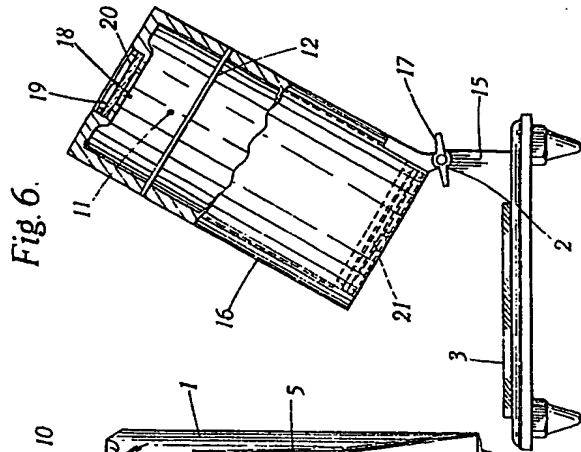


Fig. 6.

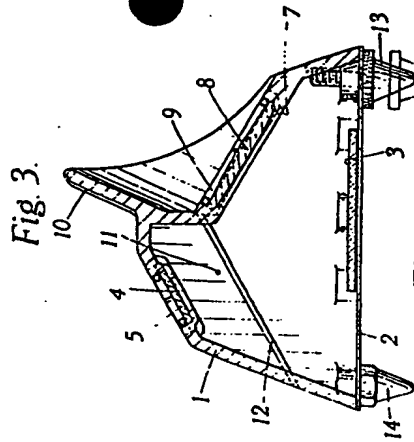


Fig. 3.

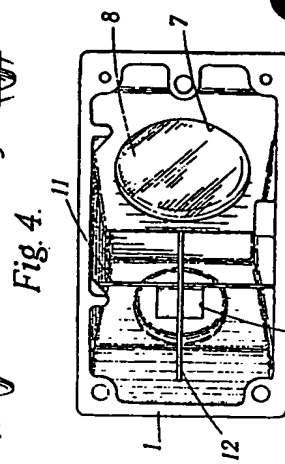


Fig. 4.

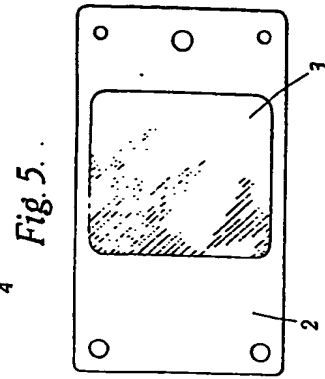


Fig. 5.

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